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To: Jim Christiansen/EPR/R8/USEPA/US@EPA, mstraube@mindspring.com, mslam@utah.gov, TyHOWARD@utah.gov
cc: Dana Williams <dana@parkcity2002.com>, Mark Harrington <MARK@parkcity2002.com>, Ron Ivie <RIvie@parkcity2002.com>, TOM Bakaly <TOM@parkcity2002.com>
Subject: Revised EMS

Hello Jim, Mo and Ty;

Based on our previous conversations, please find attached the revised EMS for your review. By this time, I am sure you are tired of looking at it, however at your convenience could you review the following sections that have been revised:

Section 2.1
Section 4.0
Section 4.3
Section 4.4
Section 5.1.5

Park City has evaluated the pros and cons of making the XRF sampling mandatory v.s. voluntary and have determined that our first approach to obtaining a representative data-set should be on a voluntary basis. If that cannot be achieved the city would then seriously consider making it mandatory. However, we feel that granting the citizens of these areas consideration in regards to volunteering should be our first approach.

Regarding the lots that have not been capped and exhibit elevated levels of lead. This remains a priority of the city to see that they are capped within the next two years. Lastly, the lots that have never been sampled nor capped, the proposal has been rewritten to require these properties be sampled and characterized. In the event, elevated levels are found on location the mandatory cap would be applicable. The reason PCMC has decided to go this route is there are some property owners that have made improvements, but have never bothered to have the lot tested. Because of this, the city's first step would be identification through sampling and then if needed, require a cap.

Park City has also placed within the proposal a loan program for residents that have a financial hardship in re-landscaping. Regarding the XRF sampling, included in the EMS is taking composite samples of the front, back, and sides and obtaining an average based on these samples. Any XRF average for a particular property that exceeds a 1000-ppm would require additional investigation to determine the "hot spot" and capping the area of concern.

I know that UDEQ and USEPA were seeking a mandatory XRF sampling and if the approach PCMC has chosen makes the proposal inadequate, please let me know. But our goal is to eventually sample all lots and get as broad as data set as we can get.

Let me know your thoughts and we can discuss. If we are somewhat on the same page, my hopes would be to have a final draft available by the next stakeholders meeting.

Thanks,

Jeff

>>> <Christiansen.Jim@epamail.epa.gov> 07/09/03 05:32PM >>>
First, a reiteration of the my concerns we discussed this week:

Mandatory vs. non-mandatory XRF sampling. My initial statement on this was: (1) while I could live with voluntary, there was a risk associated this approach. If you don't get sufficient numbers to volunteer, this may be problematic and delay decision making now or in the future. Mandatory sampling brings certainty and a quicker likelihood of CERCLIS archival - I don't have to wait to see, I know you will get necessary samples up front. (2) More importantly, I questioned why soil sampling was voluntary, but the EMS called for visual inspections that were not voluntary. The way the EMS currently reads, these visual inspections could lead to a requirement for homeowner maintenance. This seemed very inconsistent. This led to my next concern regarding XRF results....

Elevated lead levels in EMS sample results do not spur the same requirements they did in the Ordinance. The way the Ordinance and EMS currently read, residents are required to remediate their yard if their initial, pre-capping results are over 1000 ppm no matter the condition of the yard. However, once they remediate, the EMS reads that it doesn't matter if sample results are over 1000 ppm - if the grass cover is ok, then no need for remediation. This is inconsistent and unacceptable to EPA, and is actually a step back from current requirements. Even grass covered soils produce dust, subtantial amounts, that can lead to problems. Maintenance of the six inch cover, and maintenance of the condition that surface soils contain less than 1000 ppm lead, is the entire point of the Ordinance, should be understood, and should be enforceable down the line. If the six inch cover wasn't necessary, only grass, then we would have only planted grass in the 1980s or put a 1" cap on. Once an exceedance is found, the way you enforce and the way you fix it can vary and need not be drastic. We discussed using follow up sampling to pinpoint the cause of sample failure, then doing spot remediation.

No real actions contemplated to achieve 100% compliance (e.g. address Sally's group). Again, this seems fundamentally unfair to me. While I don't feel that this has to happen immediately, or we have to set a strict deadline, the EMS/Ordinance needs provisions that ensure, over time, 100% compliance. We discussed property transaction or other approaches.

Second, one additional concern...

How we sample during follow ups. No detail on this in the EMS, and the notion of just a front and back yard sample seems very inadequate. I recommend this: (1) In yards, one composite sample each be collected from front, sides, and back. This covers all areas, and with composites, does a good job of getting an "average" value. (2) Take samples in specific use areas without grass cover (such as play areas and gardens). Direct exposure is more likely here, as is turning over soil, and they should not be skipped over. (3) All of these "follow up" samples should be collected only at

the
0-1" soil interval. This is the area of most concern that would cause most exposure, and eliminates the problem of failures driven by soil five inches deep. Then, if you have an exceedance, you know where it came from, and can conduct follow up sampling to pinpoint problems even more. For yards, especially those with good ground cover, I would suggest that only if the average of all the yard samples was over 1000 ppm would action be required. For specific use areas, I would suggest that a single exceedance should spur action.

Last, some ideas on representativeness and number of properties to sample for already remediated properties..

If you aren't going for assessments of 100% of properties for all time, which is really impractical, the next best thing is to attempt to assess a subset of properties that can be considered representative of all properties, both spatially and temporally. Same approach we would employ in a blood lead study - we can't sample everyone, but try to get enough kids in enough categories to represent the whole (though it is a one time event, which is one of the biggest criticisms of blood lead studies). This approach means that not all properties will be sampled in any one event, and even if you did the same sampling forever, all properties may not be sampled.
Because we are evaluating subjective things (houses) as opposed to numbers, we can't do actual stats to determine the appropriate sample size for about 400 houses. We won't have standard deviations, etc. The best I can tell you is that when doing basic stat tests, your confidence increases greatly when you go to about 30 observations - which gets you into the large sample size realm. I would say if we went to 40, which is about 10% and a nice round number, that we would be fine. Here is a rationale I propose, and you can tweak it to fit the actual numbers of houses, which you know better....
For the initial review, randomly select 60 houses, with at least 10 in each area, attempt to sample. If you get at least 6 OKs from each area, and at least 40 total, I'd consider that representative. If not, retry. Once sampled, evaluate results. If more than 1 or 2 homes have significant problems, you probably have a systematic problem (that would translate to about 10 or 20 across the board). In this case, you would want to conduct similar follow up sampling yearly. If you have 1 or 2 or less, I'd consider those isolated instances, and I'd recommend you follow up again the same way in five years (EPA requires five year reviews on all sites where waste is managed in place). You'll have to keep going into the foreseeable future, but if you see a pattern of good news, you can reduce the frequency ad/or numbers or go to a different evaluation system. This approach, coupled with ongoing visual inspections and property owner/buyer requests for sampling, should provide a pretty good

snapshot of whether the caps are doing their jobs.

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